United States
Department of
Agriculture

Natural Resources
Conservation
Service

Oregon
Basin Outlook Report

June 1, 2012

Summer maintenance at Starr Ridge SNOTEL site, May 2012

As snow surveyors, we are often asked, "What do you do in the summer after the snow melts?" This year, we were able to capitalize on the early snowmelt to start the summer maintenance season a little sooner than normal. During the snow-free period, we will visit all 149 Oregon and Washington SNOTEL sites to drain the precipitation that has collected in the tall storage gages (center of photo above). These precipitation gages are designed to store rain, snow, sleet and hail for the entire year. Other types of regular site maintenance activities include: calibrating sensors, replacing malfunctioning sensors, repairing any structures or equipment that was damaged during the winter by heavy snow load, wildlife or vandalism. We are usually still doing SNOTEL site maintenance in October when the first snowflakes of winter begin to fall.

Contents

General Outlook

June 1, 2012

SUMMARY

Most of Oregon experienced dry and warm conditions during the month of May. The warm, sunny weather caused some dirt roads and trails in the lower elevations to become dusty already. The trend this winter has been for the end of each month to bring a surprise. Memorial Day weekend brought a drop in temperatures and a return of a wet spell. Higher elevations accumulated up to a foot of new snow. This burst of moisture allowed the Cascade Mountains to receive more precipitation than the usual allotment for May. Northwestern Oregon is hanging on to ample snow in the high country and will continue to supply the Willamette, Deschutes and Hood Rivers with plenty of water this summer. Elsewhere, most of the snow has run out of the hills and most rivers have experienced their snowmelt-driven peak flows for the season.

Summer streamflow forecasts range widely across Oregon. While rivers across western Oregon are forecast to have near normal to above normal flows, water supply conditions for the rest of the state are expected to be below average this summer. Adequate reservoir storage across most of Oregon will likely help to buffer the impacts of low water supply conditions, especially in the eastern basins of the state.

SNOWPACK

Most of May was warm and dry, which resulted in typical spring snowmelt conditions across Oregon. Then, an unusually cold, Memorial Day storm front moved through, dropping up to a foot of new snow in the higher elevations. Many mid-elevation SNOTEL sites across the state recorded measurable snow during this event, including several that had already melted out.

As of June 1, the snowpack at most of the Oregon SNOTEL sites had melted out. However, 10 of the 80 SNOTEL sites in the state were still recording snow. For comparison, last year at this time, 40 SNOTEL sites were recording snow. Last year on June 1, the mid-elevation sites had as much as four times the snow water content as this year, while the high-elevation sites had nearly twice the amount of snow water content as this year.

PRECIPITATION

The northwest quadrant of the state was the only region of Oregon that received a normal amount of precipitation during May. The rest of the state was quite dry for the month, despite the storm at the end of May that brought significant rain and a dusting of snow to most of Oregon. The Owyhee and Malheur basins were the driest in Oregon, receiving only 59 percent of normal May precipitation.

The spring of 2012 was the wettest spring on record for Portland, according to the 71-year National Weather Service record at the Portland International Airport. This weather station received a record-breaking 14.53 inches of rainfall during March through May. In addition, a rare thunderstorm on May 26 brought a deluge to the metro area that broke the all-time 1-hour, 2-hour, and 3-hour rainfall records for May. In fact, the 1.02 inches of rain recorded in Portland during one hour of the May 26 thunderstorm was only 0.01 inches away from the all-time one-hour record rainfall that was measured back in September 2010. The wettest Oregon SNOTEL site this spring was North Fork SNOTEL. Located in the Bull Run watershed near Mt. Hood, the site received 52.9 inches of precipitation during March through May, which is 157 percent of average for this time period.

Since the beginning of the water year, precipitation totals have ranged from 82 percent of average in the Lake County and Harney basins to 111 percent of average in the Hood, Mile Creeks and Lower Deschutes basins.

RESERVOIRS

As of June 1, the majority of the reservoirs in Oregon are holding near normal or slightly above normal volumes of water for this time of year. For those areas that have experienced low snowpacks and dry conditions this winter and spring, such as the southeastern Oregon basins, adequate reservoir storage should help compensate for the well below average streamflows expected this summer. The Klamath basin reservoirs are an exception to this trend. The storage levels at all three Klamath reservoirs decreased more than normal during May, and are currently well below normal.

The June 1 storage at 26 major Oregon reservoirs analyzed in this publication was 92 percent of average. As of June 1, water storage at these reservoirs totaled 2389 thousand acre-feet (kaf), representing 74 percent of usable capacity. Last year at this time, these same reservoirs stored 2734 kaf of water. It is critical to note that usage of the reservoir water started much later last spring, as it was unusually wet and cool.

STREAMFLOW

As of June 1, snow has melted from most Oregon SNOTEL sites and the snowmelt-induced streamflow peaks have already occurred for many streams. The higher elevations in the Cascade Mountains are still hanging on to snow that will likely keep most western and central Oregon rivers running at near normal levels during the summer.

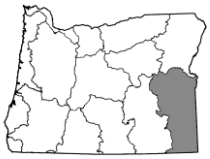
Summer streamflow forecasts are highly variable across Oregon, as of June 1. Above average summer streamflows are expected in most of the western basins of Oregon, as well as the Deschutes River basin. Well below normal streamflows are forecast in the Owyhee, Malheur, Upper John Day, Lake County and Harney basins. All other Oregon basins have slightly below normal forecasts for streamflow volumes from June through September. A combination of a low snowpack this winter and a warm, dry spring in southeastern Oregon can be blamed for the very low summer flows that are expected in this region.

A summary of streamflow forecasts for Oregon follows:

STREAM	PERIOD	PERCENT OF AVERAGE
Owyhee Reservoir Inflow	Jun-Sep	41
Grande Ronde R at La Grande	Jun-Sep	74
Umatilla R at Pendleton	Jun-Sep	90
Deschutes R at Benham Falls	Jun-Sep	100
MF Willamette R bl NF	Jun-Sep	102
Rogue R at Raygold	Jun-Sep	81
Upper Klamath Lake Inflow	Jun-Sep	88
Silvies R nr Burns	Jun-Sep	37

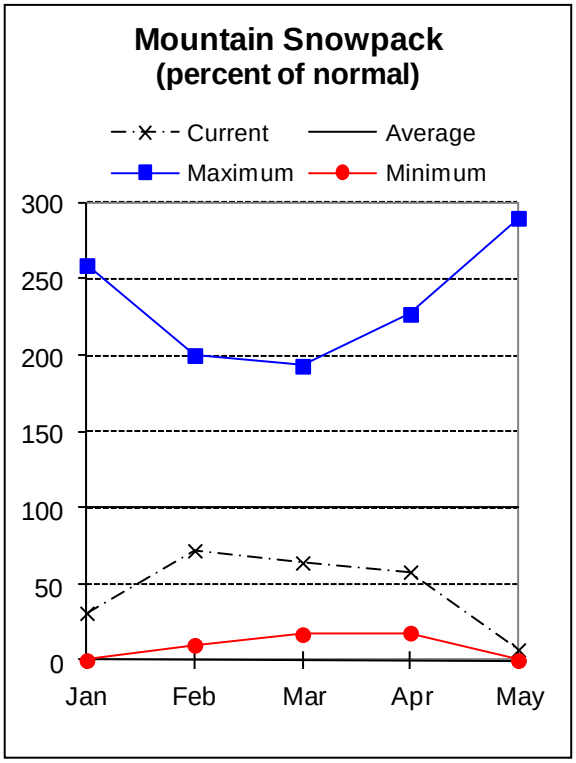
Some of these forecasts assume that normal weather conditions will occur from now to the end of the forecast period. The forecasts in this bulletin are a result of coordinated activity between the Natural Resources Conservation Service and the National Weather Service as an effort to provide the best possible service to water users.

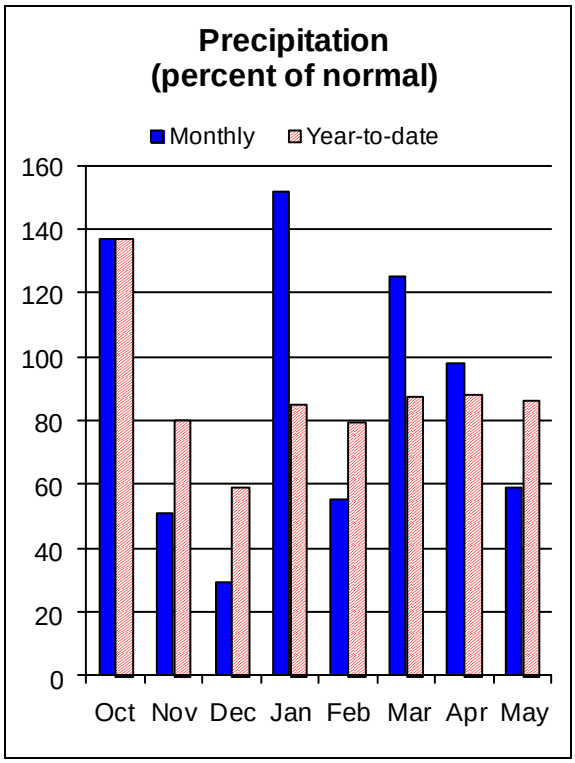
This report contains data furnished by the Oregon Department of Water Resources, U.S. Geological Survey, NOAA National Weather Service and other cooperators. This report will be updated monthly, January through June.



Owyhee and Malheur Basins

June 1, 2012





Water Supply Outlook

May was very dry in southeastern Oregon. Precipitation for the month was only 59 percent of average for the Owyhee and Malheur basins, which was the lowest in the state. Since October 1, the water year precipitation has been 86 percent of average.

Reservoir storage in the Owyhee and Malheur basins dipped below average this month, due to higher than normal decreases from May 1 storage levels. June 1 storage at the four irrigation reservoirs in the Owyhee and Malheur basins was 94 percent of average and 79 percent of capacity. Last year at this time, reservoirs in the basin were at 97 percent of capacity.

Summer streamflow forecasts in the Owyhee and Malheur basins remain well below normal. In general, water supply conditions are better in the Malheur River basin, and decrease as you move south. The June through September streamflow forecasts in the basin range from 24 percent of average for the Owyhee River near Rome to 58 percent of average for the Malheur River near Drewsey. Water users in the basin can continue to expect well below normal streamflows for the summer of 2012.

For more information contact your local Natural Resources Conservation Service office:
Ontario - (541) 889-7637
Or visit: http://www.or.nrcs.usda.gov/snow/watersupply/

OWYHEE AND MALHEUR BASINS
Streamflow Forecasts - June 1, 2012

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (1000AF)	50% (% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
Malheur R nr Drewsey	JUN-JUL	2.8	4.7	6.2	54	8.0	10.9	11.5
	JUN-SEP	4.0	6.2	8.0	58	10.0	13.4	13.7
NF Malheur R at Beulah (2)	JUN-JUL	6.8	9.0	10.6	69	12.4	15.2	15.3
Owyhee R bl Owyhee Dam (2)	JUN-JUL	10.0	17.1	23	28	30	41	82
	JUN-SEP	27	38	46	41	55	70	112
Owyhee R nr Rome	JUN-JUL	1.4	4.3	11.5	16	23	39	71
	JUN-SEP	3.6	9.2	22	24	35	54	91

OWYHEE AND MALHEUR BASINS
Reservoir Storage (1000 AF) - End of May

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
BEULAH RES	60.0	53.6	57.9	46.9
BULLY CREEK	30.0	18.7	24.0	23.4
OWYHEE	715.0	565.6	721.3	614.6
WARMSPRINGS	191.0	146.5	166.5	145.9

OWYHEE AND MALHEUR BASINS
Watershed Snowpack Analysis - June 1, 2012

Watershed	Number of Data Sites	This Year as % of Last Yr	This Year as % of Average
Owyhee	7	0	0
Upper Malheur	3	0	0
Jordan Creek	2	0	0
Bully Creek	0	0	0
Willow Creek	0	0	0

* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table. The average is computed for the 1971-2000 base period.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural volume - actual volume may be affected by upstream water management.

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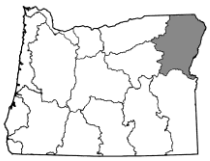
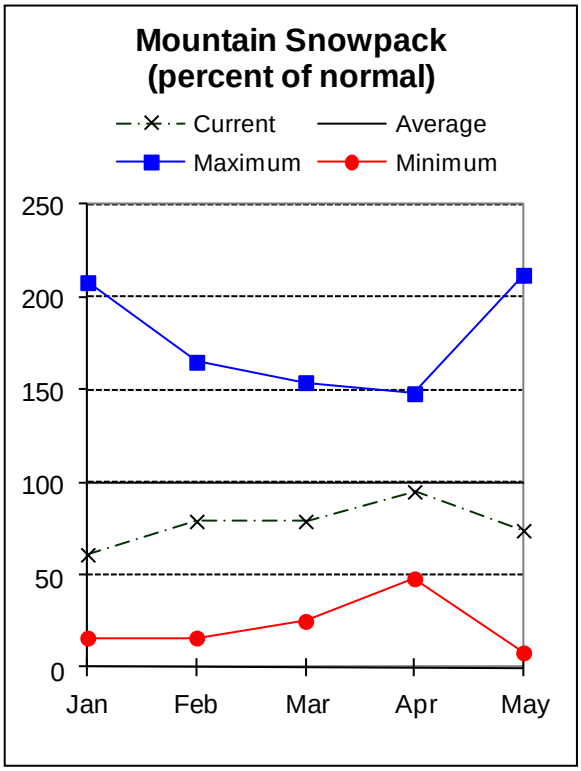
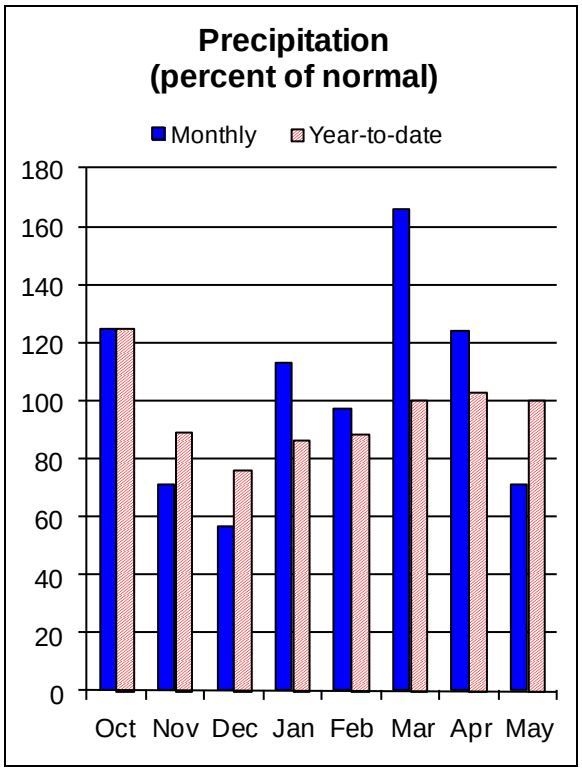


Burnt, Powder, Grande Ronde, and Imnaha Basins

June 1, 2012





Water Supply Outlook

For northeastern Oregon, May was a month of typical spring snowmelt bookended by snow storms at the beginning and end of the month. A streak of warm weather in mid-May increased the rate of snowmelt. This was followed by a big storm system that brought multiple inches of rain and snow to the mountains. As of June 1, only 3 SNOTEL sites out of 17 in the Burnt, Powder, Pine, Grande Ronde and Imnaha basins still had snow. Last year at this time, 11 of these 17 sites still had snow.

Despite significant precipitation during the late-May storm, May was a drier than normal month for northeastern Oregon. The Burnt, Powder, Pine, Grande Ronde and Imnaha basins received 71 percent of normal precipitation in May. Since the beginning of water year 2012, precipitation in the basin has been 100 percent of average.

June 1 storage at Phillips Lake, Thief Valley and Unity reservoirs was 94 percent of average and 86 percent of capacity.

The June through September streamflow forecasts range from 43 percent of average for the Powder River near Sumpter to 93 percent of average for the Imnaha River at Imnaha. Water users in the basin can expect well below normal to near normal streamflows for the summer of 2012.

For more information contact your local Natural Resources Conservation Service office:
Enterprise- (541) 426-4588; Baker City - (541) 523-7121; LaGrande - (541) 963-4178
Or visit: http://www.or.nrcs.usda.gov/snow/watersupply/

BURNT, POWDER, PINE, GRANDE RONDE AND IMNAHA BASINS
Streamflow Forecasts - June 1, 2012

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (1000AF)	50% (% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
Bear Ck nr Wallowa	JUN-SEP	23	27	30	86	33	37	35
Burnt R nr Hereford (2)	JUN-JUL	1.2	1.9	2.4	47	2.9	3.6	5.1
	JUN-SEP	2.1	2.9	3.5	50	4.1	4.9	7.0
Catherine Ck nr Union	JUN-JUL	14.4	17.4	19.4	78	21	24	25
	JUN-SEP	17.8	21	23	79	25	28	29
Deer Ck nr Sumpter	JUN-JUL	0.2	1.1	1.7	44	2.2	3.1	3.8
Grande Ronde R at La Grande	JUN-JUL	10.7	19.8	26	72	32	41	36
	JUN-SEP	14.3	25	32	74	39	50	43
Grande Ronde R at Troy (1)	JUN-JUL	250	355	400	85	445	550	470
	JUN-SEP	330	435	485	86	535	640	565
Imnaha R at Imnaha	JUN-JUL	92	103	111	94	119	130	118
	JUN-SEP	110	123	132	93	141	154	142
Lostine R nr Lostine	JUN-JUL	58	63	66	89	69	74	74
	JUN-SEP	65	70	74	89	78	83	83
Pine Ck nr Oxbow	JUN-JUL	33	40	45	82	50	57	55
	JUN-SEP	37	45	50	81	55	63	62
Powder R nr Sumpter	JUN-JUL	1.8	5.4	7.8	43	10.2	13.8	18.0
	JUN-SEP	1.2	5.3	8.0	43	10.7	14.8	18.8

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BURNT, POWDER, PINE, GRANDE RONDE AND IMNAHA BASINS
Reservoir Storage (1000 AF) - End of May

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
PHILLIPS LAKE	73.5	64.9	76.2	65.3
THIEF VALLEY	17.4	13.5	14.3	17.0
UNITY	25.2	21.1	24.7	23.1
WALLOWA LAKE	37.5	24.0	21.0	28.0
WOLF CREEK	10.4	11.0	11.1	9.8

BURNT, POWDER, PINE, GRANDE RONDE AND IMNAHA BASINS
Watershed Snowpack Analysis - June 1, 2012

Watershed	Number of Data Sites	This Year as % of Last Yr	This Year as % of Average
Upper Grande Ronde	7	0	0
Wallowa	4	27	80
Imnaha	3	36	87
Powder	7	0	0
Burnt	2	0	0

* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

The average is computed for the 1971-2000 base period.

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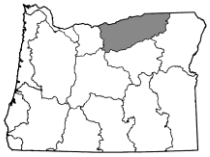
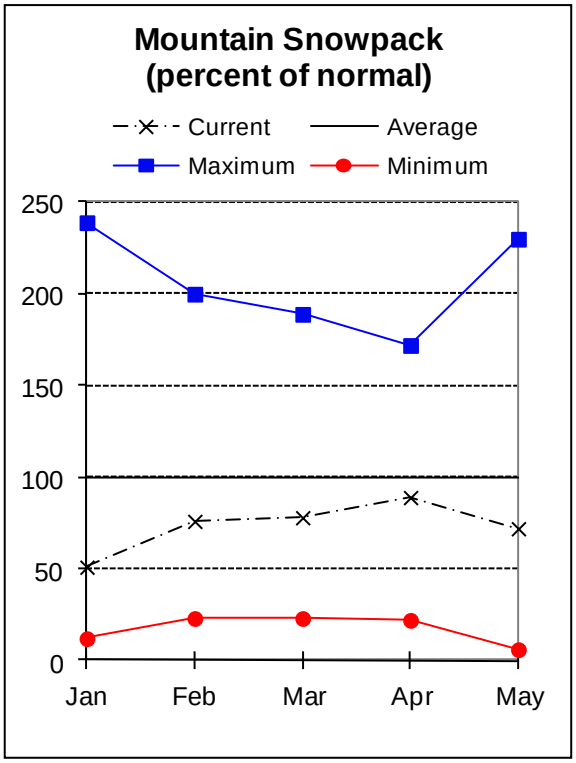
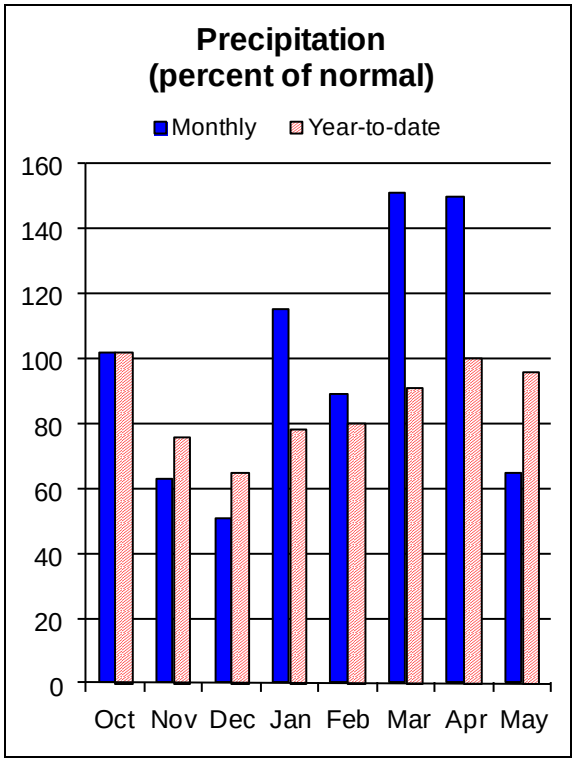


Umatilla, Walla Walla, Willow Rock, and Lower John Day Basins

June 1, 2012





Water Supply Outlook

May was a dry month in the Umatilla, Walla Walla, Willow, Rock and Lower John Day basins. However, the month was punctuated by two storm systems that brought spring rains to the region. The cool, wet storm event in late May brought several inches of snow accumulation to the higher elevations of the basin, but it melted quickly. As of June 1, Milk Shakes SNOTEL site was the only SNOTEL site that still had snow in the basin. Last year at this time, 4 of the 8 sites in the basin were still recording significant snowpack.

Despite the significant rain storm in late May, precipitation for the month in the basin was only 65 percent of average. Since the beginning of water year 2012, precipitation has been 96 percent of average for the basin.

As of June 1, storage at Cold Springs and MacKay reservoirs was 85 percent of average and 72 percent of capacity.

The June through September streamflow forecasts in the basin range from 84 percent of average for the Butter Creek near Pine City to 100 percent of average for the South Fork Walla Walla River near Milton-Freewater. Water users in the basin can expect slightly below normal to normal streamflows for the summer of 2012.

For more information contact your local Natural Resources Conservation Service office:
Pendleton - (541) 278-8049; Heppner - (541) 676-5021; Condon - (541) 384-2671
Or visit: http://www.or.nrcs.usda.gov/snow/watersupply/

UMATILLA, WALLA WALLA, WILLOW, ROCK AND LOWER JOHN DAY BASINS
Streamflow Forecasts - June 1, 2012

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (1000AF)	50% (% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
Butter Ck nr Pine City	JUN-JUL	0.4	0.9	1.3	85	1.6	2.2	1.5
	JUN-SEP	0.6	1.2	1.7	84	2.1	2.7	2.0
McKay Ck nr Pilot Rock	JUN-SEP	0.2	1.8	3.0	94	4.2	6.0	3.2
Rhea Ck nr Heppner	JUN-JUL	0.1	0.7	1.2	90	1.6	2.3	1.3
Umatilla R ab Meacham Ck nr Gibbon	JUN-JUL	7.2	10.5	12.7	88	14.9	18.2	14.4
	JUN-SEP	11.7	15.2	17.5	88	19.8	23	20
Umatilla R at Pendleton	JUN-JUL	5.8	14.9	21	91	27	36	23
	JUN-SEP	10.4	19.7	26	90	32	42	29
SF Walla Walla R nr Milton-Freewater	JUN-JUL	14.2	17.2	19.2	100	21	24	19.2
	JUN-SEP	27	30	33	100	36	39	33
Willow Ck ab Willow Ck Lake nr Heppn	JUN-JUL	-0.0	0.6	1.0	67	1.4	2.0	1.5

UMATILLA, WALLA WALLA, WILLOW, ROCK AND LOWER JOHN DAY BASINS
Reservoir Storage (1000 AF) - End of May

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
COLD SPRINGS	44.6	22.9	29.4	39.2
MCKAY	73.8	62.8	65.3	62.0
WILLOW CREEK	1.8	6.1	2.2	---

UMATILLA, WALLA WALLA, WILLOW, ROCK AND LOWER JOHN DAY BASINS
Watershed Snowpack Analysis - June 1, 2012

Watershed	Number of Data Sites	This Year as % of Last Yr	This Year as % of Average
Walla Walla	2	0	0
Umatilla	5	0	0
McKay Creek	3	0	0

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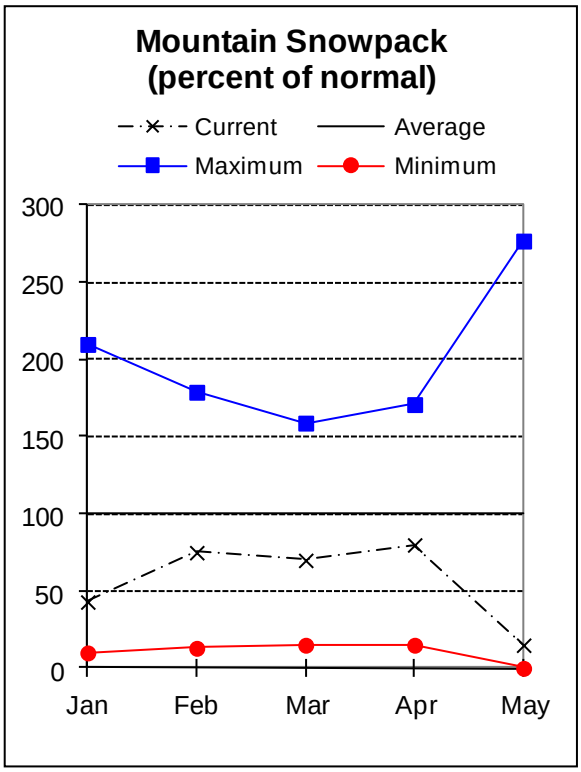
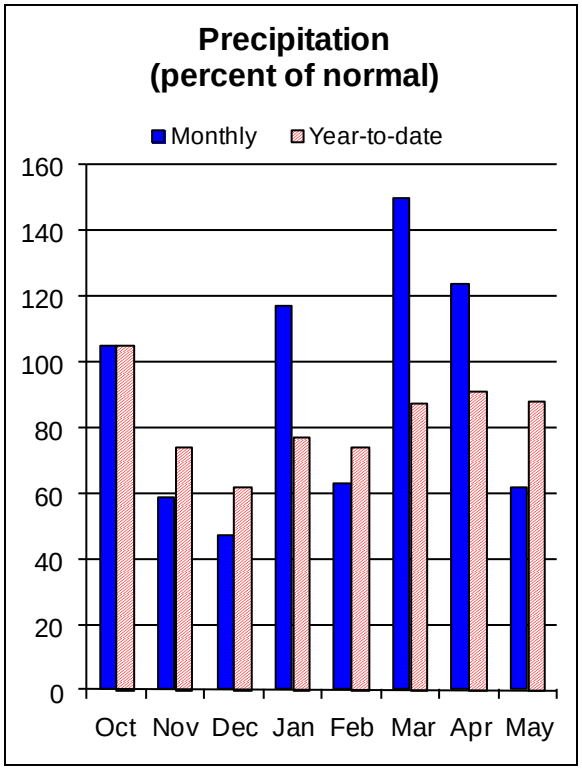
Upper John Day Basin

June 1, 2012





Water Supply Outlook

May was a very dry month in the Upper John Day basin. Two rain events, one at the beginning and one at the end of the month, provided bookends for the storm-free period in between. May precipitation was only 62 percent of average. Since the beginning of water year 2012, precipitation in the basin has been 88 percent of average.

The remaining snow melted from all of the SNOTEL sites in the basin during May. Last year at this time, 4 of the 13 sites were still recording snow.

The June through September streamflow forecasts range from 61 percent of average for Mountain Creek near Mitchell to 98 percent of average for Strawberry Creek near Prairie City. Water users in the basin can expect well below normal to near normal streamflows for the summer of 2012.

For more information contact your local Natural Resources Conservation Service office:
John Day - (541) 575-0135
Or visit: http://www.or.nrcs.usda.gov/snow/watersupply/

UPPER JOHN DAY BASIN
Streamflow Forecasts - June 1, 2012

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (1000AF)	50% (% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
Camas Ck nr Ukiah	JUN-JUL	-0.0	2.1	3.6	74	5.1	7.2	4.9
	JUN-SEP	0.5	2.7	4.2	74	5.7	7.9	5.7
MF John Day R at Ritter	JUN-JUL	4.5	12.8	18.5	64	24	32	29
	JUN-SEP	5.9	14.9	21	62	27	36	34
NF John Day R at Monument	JUN-JUL	28	63	87	64	111	146	136
	JUN-SEP	37	75	100	65	125	163	154
Mountain Ck nr Mitchell	JUN-JUL	0.0	0.3	0.5	57	0.7	1.0	0.9
	JUN-SEP	-0.0	0.3	0.6	61	0.8	1.1	0.9
Strawberry Ck nr Prairie City	JUN-JUL	2.9	3.9	4.6	98	5.3	6.3	4.7
	JUN-SEP	3.5	4.6	5.3	98	6.0	7.1	5.4

UPPER JOHN DAY BASIN
Reservoir Storage (1000 AF) - End of May

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg

UPPER JOHN DAY BASIN
Watershed Snowpack Analysis - June 1, 2012

Watershed	Number of Data Sites	This Year as % of Last Yr	This Year as % of Average
North Fork John Day	7	0	0
John Day above Kimberly	5	0	0

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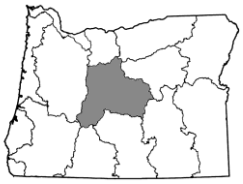
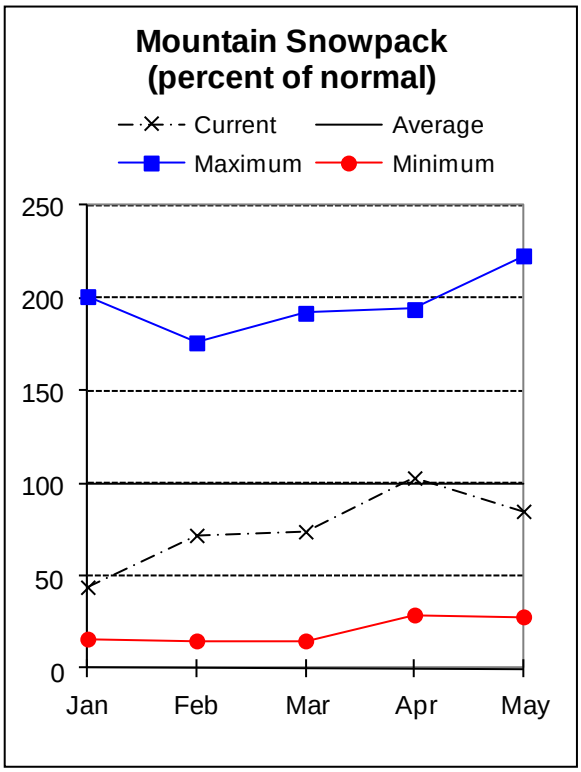
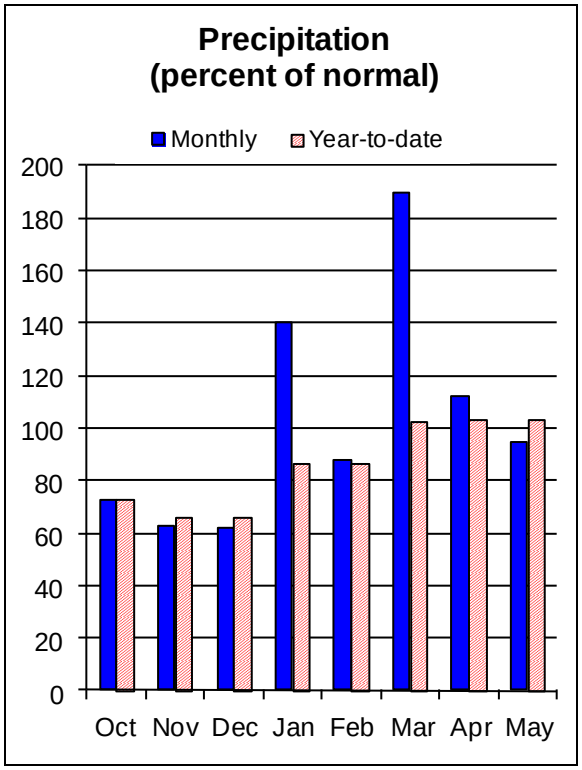


Upper Deschutes and Crooked Basins

June 1, 2012





Water Supply Outlook

The mountains of central Oregon experienced two May snow storms, bringing several inches of snowfall to SNOTEL sites in the higher elevations of the Upper Deschutes and Crooked basins. These storms bracketed a long period of warm, dry weather, and typical spring snowmelt in the middle of the month. As of June 1, only 3 of the 14 SNOTEL sites in the basin still had snow.

May precipitation was quite variable for the measurement sites across the basin. On average, precipitation for the month was 95 percent of normal. Since the beginning of water year 2012, precipitation in the Upper Deschutes and Crooked basins has been 103 percent of average. In general, the sites on the Crooked River side of the basin have been significantly drier all winter than those on the western part of the basin.

The June 1 storage at five irrigation reservoirs in the basin was 114 percent of average and at 94 percent of capacity. Above average reservoir storage in the Crooked River basin may provide a buffer for the very low streamflows that are anticipated this summer.

Streamflow forecasts in the Upper Deschutes and Crooked River basins vary greatly from east to west. The June through September streamflow forecasts range from 31 percent of average for the Prineville Reservoir Inflow to 117 percent of average for the Little Deschutes River near La Pine. Users that depend on water supplies from the east side of the basin should expect well below normal streamflows, while users in the western part of the basin can expect normal to above normal streamflows for the summer of 2012.

For more information contact your local Natural Resources Conservation Service office:
Redmond (541) 923-4358
Or visit: http://www.or.nrcs.usda.gov/snow/watersupply/

UPPER DESCHUTES AND CROOKED BASINS
Streamflow Forecasts - June 1, 2012

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (1000AF)	50% (% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
Crane Prairie Reservoir Inflow (2)	JUN-JUL	28	31	34	100	37	40	34
	JUN-SEP	57	64	68	100	72	79	68
Crescent Ck nr Crescent (2)	JUN-JUL	5.2	7.4	8.9	111	10.4	12.6	8.0
	JUN-SEP	8.5	11.2	13.1	112	15.0	17.7	11.7
Deschutes R at Benham Falls nr Bend	JUN-JUL	158	171	179	101	187	200	177
	JUN-SEP	320	340	355	100	370	390	355
Deschutes R bl Snow Ck nr La Pine	JUN-JUL	14.0	17.6	20	103	22	26	19.5
	JUN-SEP	37	43	47	104	51	57	45
Little Deschutes R nr La Pine (2)	JUN-JUL	21	27	31	119	35	41	26
	JUN-SEP	29	36	41	117	46	53	35
Ochoco Reservoir Inflow (2)	JUN-JUL	0.1	0.9	1.5	52	3.6	5.2	2.9
	JUN-SEP	0.1	0.9	1.0	35	3.3	4.9	2.9
Prineville Reservoir Inflow (2)	JUN-JUL	0.5	2.8	3.0	33	7.4	13.9	9.2
	JUN-SEP	0.5	3.0	3.1	31	7.9	15.0	10.1
Whychus Ck nr Sisters	JUN-JUL	21	23	24	100	25	27	24
	JUN-SEP	33	35	37	103	39	41	36

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UPPER DESCHUTES AND CROOKED BASINS
Reservoir Storage (1000 AF) - End of May

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
CRANE PRAIRIE	55.3	51.4	48.8	42.5
CRESCENT LAKE	86.9	80.8	79.0	58.9
OCHOCO	47.5	40.8	42.5	35.9
PRINEVILLE	153.0	143.0	149.2	142.2
WICKIUP	200.0	191.8	182.5	166.6

UPPER DESCHUTES AND CROOKED BASINS
Watershed Snowpack Analysis - June 1, 2012

Watershed	Number of Data Sites	This Year as % of Last Yr	This Year as % of Average
Crooked	3	0	0
Little Deschutes	4	33	94
Deschutes above Wickiup R	4	22	69
Tumalo and Squaw Creeks	2	31	99

* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table..

The average is computed for the 1971-2000 base period.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural volume - actual volume may be affected by upstream water management.

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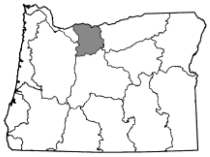
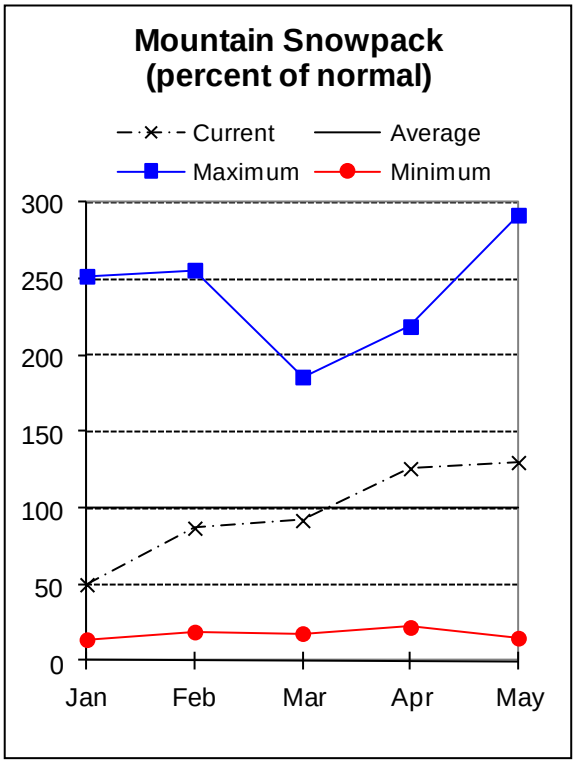
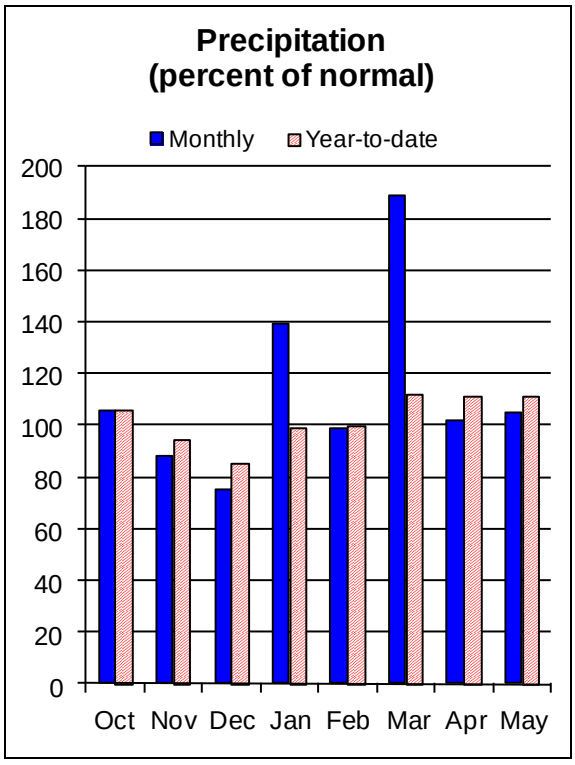


Hood, Mile Creeks, and Lower Deschutes Basins

June 1, 2012





Water Supply Outlook

May began with significant snow accumulation in the mountains of northwest Oregon. Several sites saw more than a foot of new snowfall before spring weather returned and the snowmelt engine revved up again. Warm temperatures and dry weather throughout mid-May caused typical spring snowmelt. And then winter got one final chance to shine at the end of the month, with a storm system that delivered 9 inches of new snow to Mt Hood Test SNOTEL site. As of June 1, the basin snowpack was 140 percent of average and 5 out of 8 SNOTEL sites in the basin were still recording snow.

Capping off a very wet spring in northwest Oregon, May precipitation was 105 percent of normal for the Hood, Mile Creeks and Lower Deschutes basins. This was the only basin in the state with above normal May precipitation. According to the National Weather Service, the long-term rain gage at the Portland International Airport set a record for March thru May precipitation with 14.53 inches of rain in a 3-month period. Since the beginning of water year 2012, precipitation in the basin has been 111 percent of average, the highest in the state.

The June through September streamflow for Hood River at Tucker Bridge is forecast to be 117 percent of average. Water users in the Hood, Mile Creeks and Lower Deschutes basin can expect above normal streamflows during the summer of 2012.

For more information contact your local Natural Resources Conservation Service office:
The Dalles (541) 296-6178
Or visit: http://www.or.nrcs.usda.gov/snow/watersupply/

HOOD, MILE CREEKS AND LOWER DESCHUTES BASINS
Streamflow Forecasts - June 1, 2012

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (1000AF)	50% (% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
WF Hood River nr Dee	JUN-JUL	33	41	46	115	51	59	40
Hood R At Tucker Bridge	JUN-JUL	81	89	95	116	101	109	82
	JUN-SEP	123	137	146	117	155	169	125

HOOD, MILE CREEKS AND LOWER DESCHUTES BASINS
Reservoir Storage (1000 AF) - End of May

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
CLEAR LAKE (WASCO)	11.9	10.2	7.9	5.9

HOOD, MILE CREEKS AND LOWER DESCHUTES BASINS
Watershed Snowpack Analysis - June 1, 2012

Watershed	Number of Data Sites	This Year as % of Last Yr	This Year as % of Average
Hood River	5	59	147
Mile Creeks	0	0	0
White River	4	66	109

* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

The average is computed for the 1971-2000 base period.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
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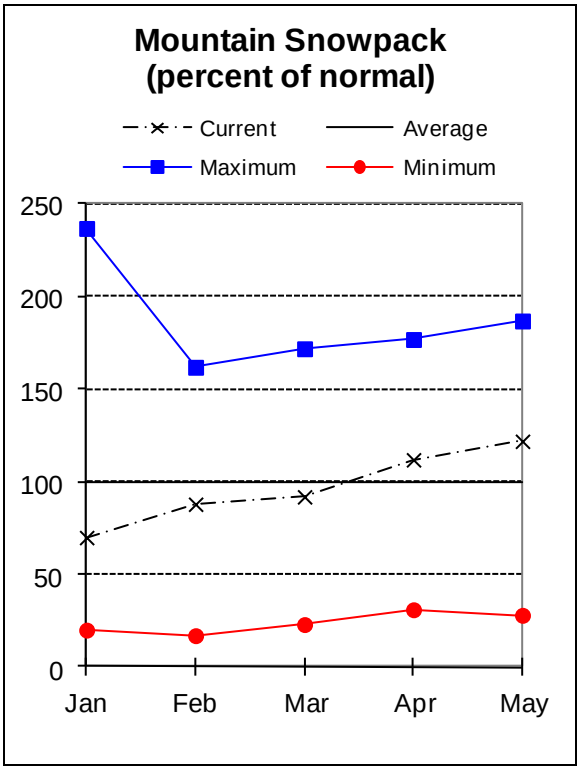
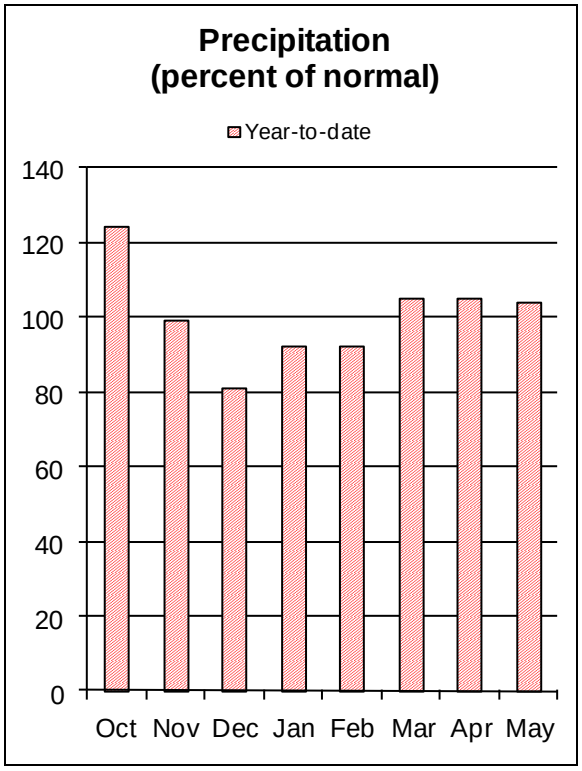
Lower Columbia Basin

June 1, 2012





Water Supply Outlook

On June 1, the snowpack in the Columbia River basin was 122 percent of average, as measured by 235 SNOTEL sites in the US portion of the basin. Precipitation in the US portion of the basin since October 1 has been 104 percent of average.

Streamflow forecasts for the Oregon portion of the Lower Columbia River Basin remain largely unchanged from last month's report. The Columbia River at The Dalles is forecast to be 116 percent of average for the June through September period, and the Sandy River near Marmot is forecast to be 115 percent of average for the same period.

For more information contact your local Natural Resources Conservation Service office:
Oregon City - (503) 656-3499
Or visit: http://www.or.nrcs.usda.gov/snow/watersupply/

LOWER COLUMBIA BASIN
Streamflow Forecasts - June 1, 2012

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (1000AF)	50% (% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
Columbia R at The Dalles (2)	JUN-JUL	42900	46200	48500	111	50800	54100	43800
	JUN-SEP	59400	63800	66800	116	69800	74200	57800
Sandy R nr Marmot	JUN-JUL	106	119	127	117	135	148	109
	JUN-SEP	154	171	183	115	195	210	159

LOWER COLUMBIA BASIN
Reservoir Storage (1000 AF) - End of May

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg

LOWER COLUMBIA BASIN
Watershed Snowpack Analysis - June 1, 2012

Watershed	Number of Data Sites	This Year as % of Last Yr	Average
Sandy	7	52	140

* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

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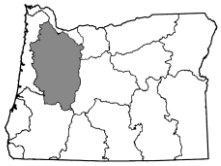
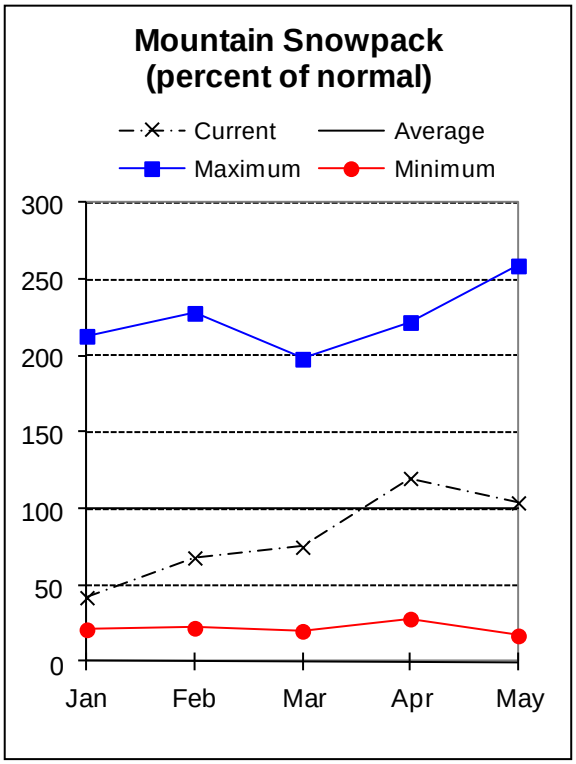
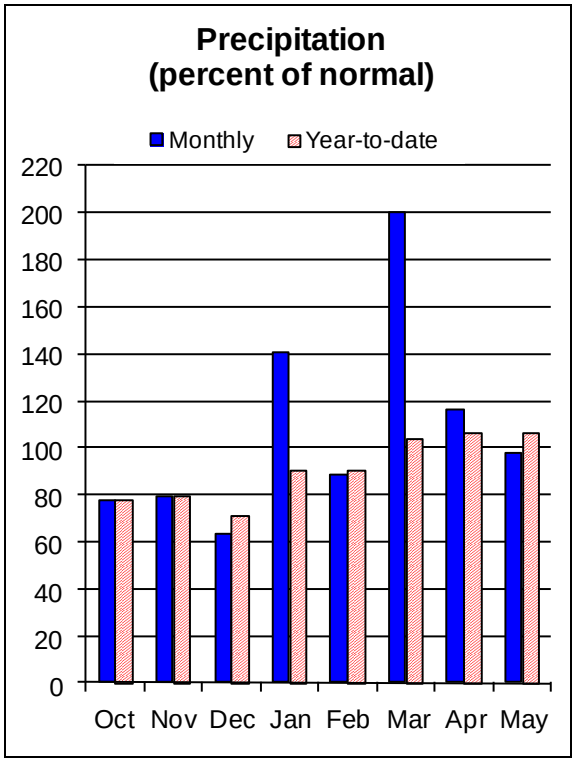


Willamette Basin

June 1, 2012





Water Supply Outlook

May opened with a snow storm in the Cascade Mountains of Oregon, and departed with another snow event in the high elevations of the Willamette basin. Accumulations of several inches were common even down to 4200 feet elevation. In between these two storm systems, the month was generally dry and warm, which lead to typical spring snowmelt rates. As of June 1, 5 of 22 SNOTEL sites in the basin were still recording snow. Last year at this time, 12 of these 22 sites had measurable snow.

Precipitation for the month of May was 98 percent of average. Since the beginning of water year 2012, precipitation in the basin has been 106 percent of average.

The June 1 storage at Timothy Lake and Henry Hagg reservoirs was 102 percent of average and at 101 percent of capacity.

Summer streamflows in the Willamette basin are forecast to be normal to above normal for the coming summer. The June through September streamflow forecasts for the basin range from 100 percent of average for Cottage Grove Lake Inflow to 119 percent of average for Detroit Lake Inflow and North Santiam River at Mehama. Elsewhere in the basin, the McKenzie near Vida is forecast to be 112 percent of average and the Willamette River at Salem is forecast to be 116 percent of average for the June through September period.

For more information contact your local Natural Resources Conservation Service office:
Eugene - (541) 465-6436; Portland - (503) 231-2270; Tangent - (541) 967-5925; Oregon City - (503) 656-3499;
Hillsboro - (503) 648-3174; McMinnville - (503) 472-1474
Salem - (503) 399-5746; Dallas - (503) 623-5534
Or visit: http://www.or.nrcs.usda.gov/snow/watersupply/

WILLAMETTE BASIN
Streamflow Forecasts - June 1, 2012

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (1000AF)	50% (% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
Blue Lake Inflow (1,2)	JUN-SEP	6.6	16.5	21	110	26	35	19.1
Clackamas R at Estacada	JUN-JUL	158	205	240	114	275	320	210
	JUN-SEP	275	330	365	115	400	455	318
Clackamas R ab Three Lynx (2)	JUN-JUL	136	164	183	116	200	230	158
	JUN-SEP	235	265	285	116	305	335	246
Cottage Grove Lake Inflow (1,2)	JUN-SEP	3.7	8.0	10.0	100	12.0	16.3	10.0
Cougar Lake Inflow (1,2)	JUN-SEP	69	85	92	103	99	115	89
Detroit Lake Inflow (1,2)	JUN-SEP	235	295	320	119	345	405	268
Dorena Lake Inflow (1,2)	JUN-SEP	5.9	25	34	110	43	62	31
Fall Creek Lake Inflow (1,2)	JUN-SEP	14.5	26	31	107	36	48	29
Fern Ridge Lake Inflow (1,2)	JUN-JUL	0.4	1.0	1.5	112	4.4	10.9	1.3
Foster Lake Inflow (1,2)	JUN-SEP	117	147	160	103	173	205	156
Green Peter Lake Inflow (1,2)	JUN-SEP	43	87	107	102	127	171	105
Little North Santiam R nr Mehama (1)	JUN-SEP	19.2	41	51	116	61	83	44
MF Willamette R bl NF (1,2)	JUN-SEP	245	300	325	102	350	405	320
McKenzie R bl Trail Bridge (2)	JUN-JUL	105	115	122	106	129	139	115
	JUN-SEP	185	200	210	105	220	235	200
McKenzie R nr Vida (1,2)	JUN-SEP	540	620	655	112	690	770	584

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Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (1000AF)	50% (% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
Mohawk R nr Springfield	JUN-JUL	9.1	15.0	19.0	107	23	29	17.7
Oak Grove Fork Of Clackamas	JUN-JUL	48	54	58	116	62	68	50
	JUN-SEP	85	95	101	116	107	117	87
North Santiam R at Mehama (1,2)	JUN-SEP	260	355	400	119	445	540	336
South Santiam R at Waterloo (2)	JUN-JUL	115	127	135	104	143	155	130
	JUN-SEP	149	164	175	104	186	200	169
Scoggins Ck nr Gaston (2)	JUN-JUL	0.8	1.5	2.0	115	2.5	3.2	1.7
Thomas Ck nr Scio	JUN-JUL	0.7	11.7	20	116	28	40	17.2
Willamette R at Salem (1,2)	JUN-SEP	1340	1750	1930	116	2110	2520	1664

WILLAMETTE BASIN
Reservoir Storage (1000 AF) - End of May

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
BLUE RIVER	85.5	81.5	76.8	78.2
COTTAGE GROVE	29.8	31.4	28.2	29.9
COUGAR	155.2	173.9	128.7	205.4
DETROIT	300.7	429.9	282.2	317.5
DORENA	70.5	71.1	62.8	71.3
FALL CREEK	115.5	116.1	106.1	107.0
FERN RIDGE	109.6	96.9	93.7	95.9

WILLAMETTE BASIN
Watershed Snowpack Analysis - June 1, 2012

Watershed	Number of Data Sites	This Year as % of Last Yr	This Year as % of Average
Clackamas	4	26	179
McKenzie	7	32	70
Row River	1	0	0
Santiam	6	5	17
Middle Fork Willamette	7	26	80

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WILLAMETTE BASIN
Reservoir Storage (1000 AF) - End of May

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
FOSTER	29.7	45.7	24.8	28.5
GREEN PETER	268.2	398.0	228.3	306.6
HILLS CREEK	200.2	278.7	189.8	232.5
LOOKOUT POINT	337.0	382.6	271.8	307.7
TIMOTHY LAKE	61.7	62.2	62.6	60.8
HENRY HAGG LAKE	53.0	53.4	53.3	52.4

WILLAMETTE BASIN
Watershed Snowpack Analysis - June 1, 2012

Watershed	Number of Data Sites	This Year as % of Last Yr	This Year as % of Average

* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

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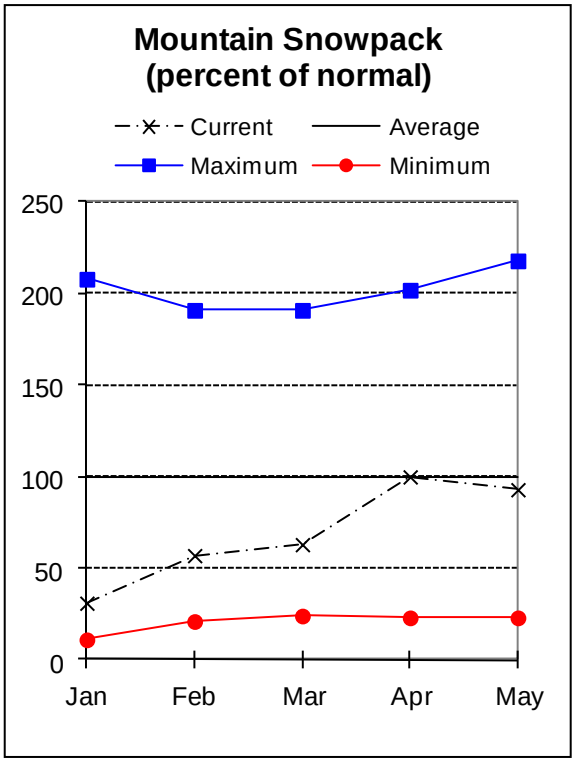
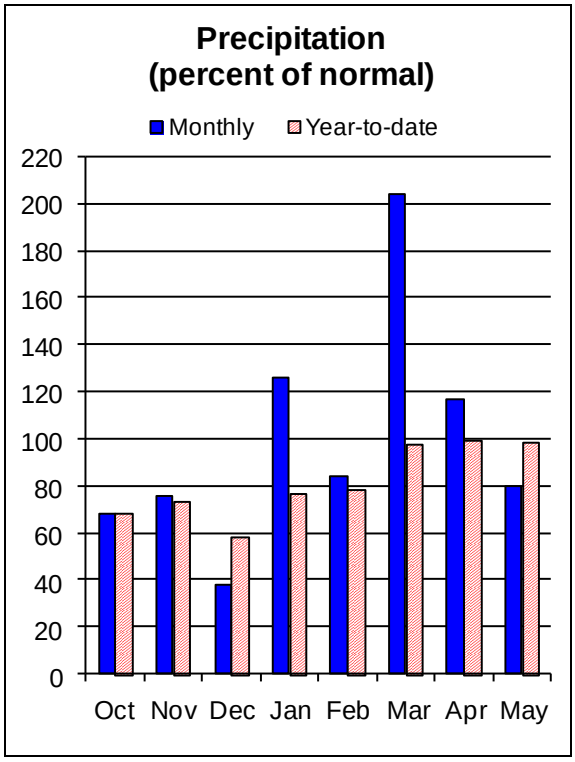
Salem - (503) 399-5746; Dallas - (503) 623-5534
Or visit: http://www.or.nrcs.usda.gov/snow/watersupply/

Rogue and Umpqua Basins

June 1, 2012





Water Supply Outlook

Even though most of the SNOTEL sites in the Rogue and Umpqua basins had already melted out by late May, a rare spring snow storm dropped several inches of snow down to 4500 feet elevation. This new snow quickly melted though, and as of June 1, all but three SNOTEL sites were devoid of snow. Last year at this time, 9 of the 12 SNOTEL sites in the basin were still recording snow.

Despite the late-May storm event, May was drier than normal across southwest Oregon. Precipitation for the month was 80 percent of average in the Rogue and Umpqua basins. Since October 1, the water year precipitation has been 98 percent of average.

The June 1 storage at 5 irrigation reservoirs in the Rogue and Umpqua basins was 112 percent of average and at 95 percent of capacity.

The June through September streamflow forecasts range from 81 percent of average for the Rogue River at Raygold to 122 percent of average for the South Umpqua River near Brockway. Elsewhere in the basin, the Illinois River at Kerby is forecast to be 116 percent of average for the same period. Water users in the Rogue and Umpqua basins can expect below normal to above normal streamflows for the coming summer, depending on their location within the basin.

For more information contact your local Natural Resources Conservation Service office:
Roseburg - (541) 673-8316; Medford - (541) 776-4267
Or visit: http://www.or.nrcs.usda.gov/snow/watersupply/

ROGUE AND UMPQUA BASINS
Streamflow Forecasts - June 1, 2012

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (1000AF)	50% (% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
Applegate Lake Inflow (2)	JUN-JUL	16.8	25	30	100	35	43	30
	JUN-SEP	22	30	36	100	42	50	36
SF Big Butte Ck nr Butte Falls	JUN-JUL	8.7	10.8	12.2	103	13.6	15.7	11.9
	JUN-SEP	16.3	19.1	21	100	23	26	21
Cow Ck nr Azalea (2)	JUN-JUL	1.9	2.8	3.5	117	4.2	5.1	3.0
	JUN-SEP	2.2	3.8	4.9	117	6.0	7.6	4.2
Hyatt Prairie Reservoir Inflow (2)	JUN-JUL	0.0	0.2	0.3	75	0.6	1.1	0.4
Illinois R at Kerby	JUN-JUL	13.8	26	35	117	44	56	30
	JUN-SEP	21	34	43	116	52	65	37
NF Little Butte Ck nr Lakecreek (2)	JUN-JUL	13.4	16.1	17.9	103	19.7	22	17.4
	JUN-SEP	26	30	33	104	36	40	32
Lost Creek Lake Inflow (2)	JUN-JUL	165	189	205	93	220	245	220
	JUN-SEP	275	310	330	93	350	385	355
Rogue R at Raygold (2)	JUN-JUL	136	177	205	80	235	275	255
	JUN-SEP	265	310	340	81	370	415	420
Rogue R at Grants Pass (2)	JUN-JUL	142	182	210	88	240	280	240
	JUN-SEP	250	300	335	87	370	420	385
Sucker Ck bl Ltl Grayback Ck nr Holl	JUN-JUL	9.0	12.0	14.1	104	16.2	19.2	13.6
	JUN-SEP	12.6	15.9	18.2	102	20	24	17.8
North Umpqua R at Winchester	JUN-JUL	225	265	290	121	315	355	240
	JUN-SEP	360	400	430	119	460	500	360
South Umpqua R nr Brockway	JUN-JUL	51	72	86	125	100	121	69
	JUN-SEP	73	95	110	122	125	147	90
South Umpqua R at Tiller	JUN-JUL	25	38	47	115	56	69	41
	JUN-SEP	36	49	58	114	67	80	51

For more information contact your local Natural Resources Conservation Service office:
Roseburg - (541) 673-8316; Medford - (541) 776-4267
Or visit: http://www.or.nrcs.usda.gov/snow/watersupply/

ROGUE AND UMPQUA BASINS
Reservoir Storage (1000 AF) - End of May

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
APPLEGATE	75.2	68.9	67.3	66.8
EMIGRANT LAKE	39.0	37.7	38.9	35.3
FISH LAKE	8.0	7.5	6.4	6.6
FOURMILE LAKE	16.1	15.5	12.5	12.5
HOWARD PRAIRIE	60.0	56.4	61.2	50.2
HYATT PRAIRIE	16.1	15.7	16.1	13.5
LOST CREEK	315.0	313.8	170.8	305.3

ROGUE AND UMPQUA BASINS
Watershed Snowpack Analysis - June 1, 2012

Watershed	Number of Data Sites	This Year as % of Last Yr	This Year as % of Average
Applegate	2	8	42
Bear Creek	1	9	42
Little Butte Creek	3	0	0
Illinois	1	0	0
North Umpqua	3	51	113
Rogue River above Grants	9	12	46

* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

The average is computed for the 1971-2000 base period.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural volume - actual volume may be affected by upstream water management.

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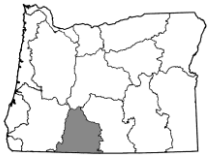
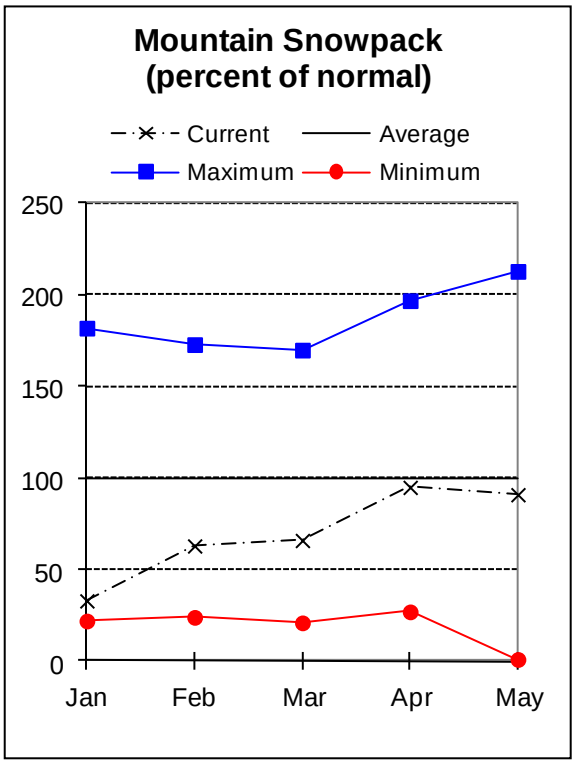
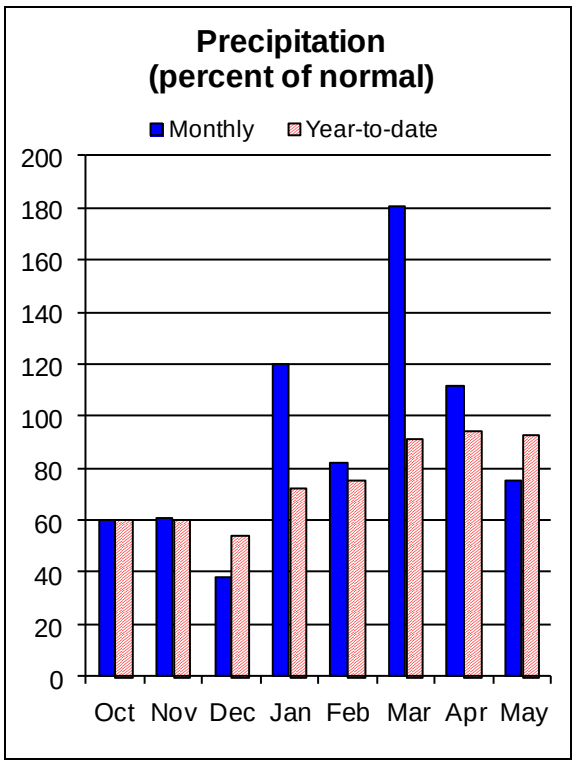


Klamath Basin

June 1, 2012





Water Supply Outlook

The Klamath basin experienced two storm systems bracketed by a long warm, dry period in May. A rare spring snow storm in late-May brought measureable snowfall to many mountain snow measurement sites in the basin. This new snow melted fast though, and as of June 1, Annie Springs SNOTEL site was the only SNOTEL site in the basin still recording snow. Last year at this time, 9 of the 17 snow measurement sites in the basin were still measuring snow.

Despite the two storm events, May was much drier than normal in the Klamath Basin. Monthly precipitation was 75 percent of average. Since the beginning of water year 2012, precipitation in the basin has been 93 percent of average.

The June 1 storage at Upper Klamath Lake, Clear Lake (CA) and Gerber reservoirs was 74 percent of average and at 53 percent of capacity.

The streamflow forecasts in the Klamath basin decreased slightly since last month's report. The June through September streamflow forecasts for the basin range from 63 percent of average for Gerber Reservoir Inflow to 90 percent of average for the Williamson River below Sprague. Water users in the basin can expect well below normal to slightly below normal streamflows for the summer of 2012.

For more information contact your local Natural Resources Conservation Service office:
Klamath Falls - (541) 883-6932
Or visit: http://www.or.nrcs.usda.gov/snow/watersupply/

KLAMATH BASIN
Streamflow Forecasts - June 1, 2012

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (1000AF)	50% (% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
Clear Lake Inflow (2)	JUN-JUL	0.3	2.0	5.5	76	9.0	14.2	7.2
	JUN-SEP	0.6	5.6	9.0	74	12.4	17.4	12.1
Gerber Res Inflow (2)	JUN-JUL	0.0	0.4	1.0	56	1.5	2.7	1.8
	JUN-SEP	0.1	0.5	1.5	63	2.6	4.1	2.4
Sprague R nr Chiloquin	JUN-JUL	30	41	48	86	55	66	56
	JUN-SEP	49	61	70	85	79	91	82
Upper Klamath Lk Inflow (1)	JUN-JUL	48	80	95	86	110	142	110
	JUN-SEP	105	153	175	88	197	245	198
Williamson R bl Sprague R nr Chiloqu	JUN-JUL	66	78	87	89	96	108	98
	JUN-SEP	116	133	145	90	157	174	162

KLAMATH BASIN
Reservoir Storage (1000 AF) - End of May

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
CLEAR LAKE (CALIF)	513.3	117.9	187.1	256.5
GERBER	94.3	58.6	71.0	68.4
UPPER KLAMATH LAKE	523.7	424.1	470.6	487.0

KLAMATH BASIN
Watershed Snowpack Analysis - June 1, 2012

Watershed	Number of Data Sites	This Year as % of Last Yr	This Year as % of Average
Lost	2	0	0
Sprague	5	0	0
Upper Klamath Lake	6	11	40
Williamson River	4	27	68

* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table. The average is computed for the 1971-2000 base period.
(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural volume - actual volume may be affected by upstream water management.

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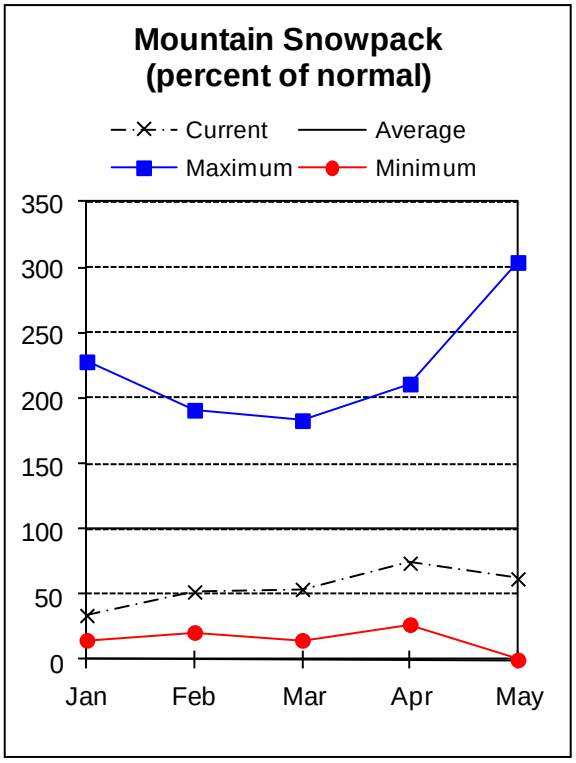
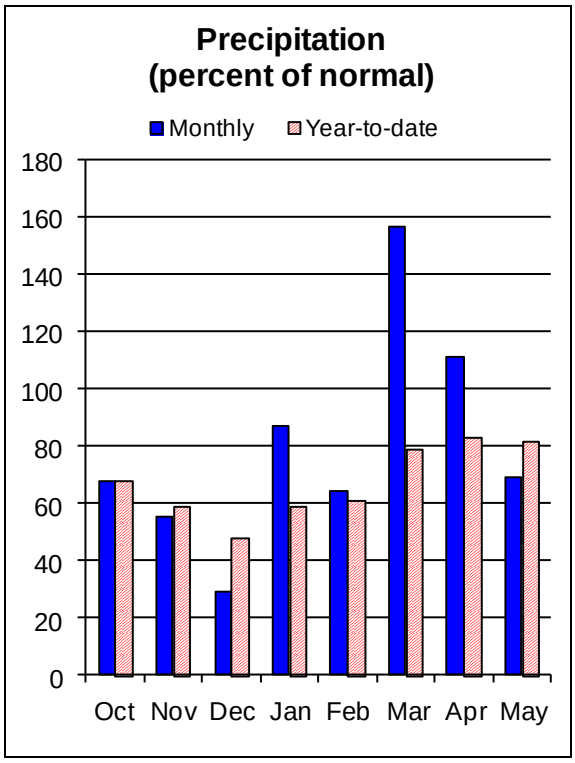
Lake County and Goose Lake

June 1, 2012





Water Supply Outlook

Dry conditions returned to the Lake County and Goose Lake basins during May. Precipitation for the month was only 69 percent of average. The total precipitation since October 1 has been 82 percent of average, the lowest in the state.

A rare late-May snowstorm brought measureable snow to most of the SNOTEL sites in the basin, but all 9 of the SNOTEL sites had melted out completely as of June 1. Last year at this time, 4 of the 9 sites still had significant snowpack.

Reservoir storage in the Lake County and Goose Lake basins remains above average, which may provide some relief from low water supply conditions. June 1 storage at Cottonwood and Drews reservoirs was 108 percent of average and at 87 percent of capacity.

Summer streamflow forecasts in the Lake County and Goose Lake basins decreased significantly since May 1. The June through September streamflow forecasts for the basin range from 47 percent of average for Deep Creek near Adel to 65 percent of average for Chewaucan River near Paisley. Water users in the basin can expect well below normal streamflows for the summer of 2012.

For more information contact your local Natural Resources Conservation Service office:
Lakeview - (541) 947-2202
Or visit: http://www.or.nrcs.usda.gov/snow/watersupply/

LAKE COUNTY AND GOOSE LAKE BASINS
Streamflow Forecasts - June 1, 2012

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (1000AF)	50% (% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
Chewaucan R nr Paisley	JUN-JUL	4.4	9.4	12.8	64	16.2	21	20
	JUN-SEP	7.4	12.6	16.2	65	19.8	25	25
Deep Ck ab Adel	JUN-JUL	1.2	4.7	7.1	45	9.5	13.0	15.7
	JUN-SEP	2.2	5.9	8.4	47	10.9	14.6	17.8
Honey Ck nr Plush	JUN-JUL	0.3	1.2	1.8	54	2.5	3.4	3.4
	JUN-SEP	0.3	1.3	2.0	54	2.6	3.6	3.6
Silver Ck nr Silver Lake (2)	JUN-JUL	0.0	0.1	0.7	73	1.2	2.1	0.9
Twentymile Ck nr Adel	JUN-JUL	0.2	1.0	2.0	49	3.0	4.4	4.1
	JUN-SEP	0.2	1.3	2.3	50	3.3	4.8	4.6

LAKE COUNTY AND GOOSE LAKE BASINS
Reservoir Storage (1000 AF) - End of May

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
COTTONWOOD	8.7	7.8	9.3	6.8
DREWS	63.0	54.9	63.5	51.0

LAKE COUNTY AND GOOSE LAKE BASINS
Watershed Snowpack Analysis - June 1, 2012

Watershed	Number of Data Sites	This Year as % of Last Yr	This Year as % of Average
Chewaucan River	3	0	0
Deep Creek	0	0	0
Drew Creek	2	0	0
Honey Creek	0	0	0
Silver Creek (Lake Co.)	4	0	0
Twentymile Creek	0	0	0

* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table. The average is computed for the 1971-2000 base period.
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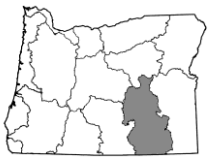
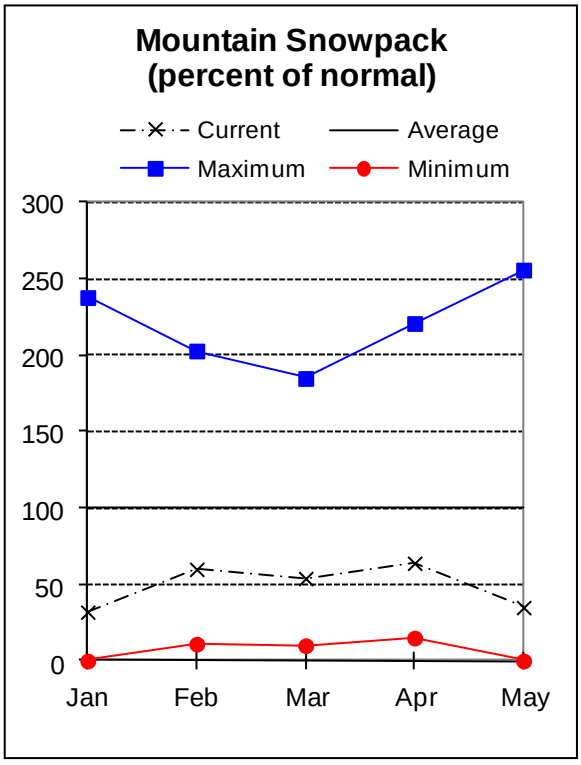
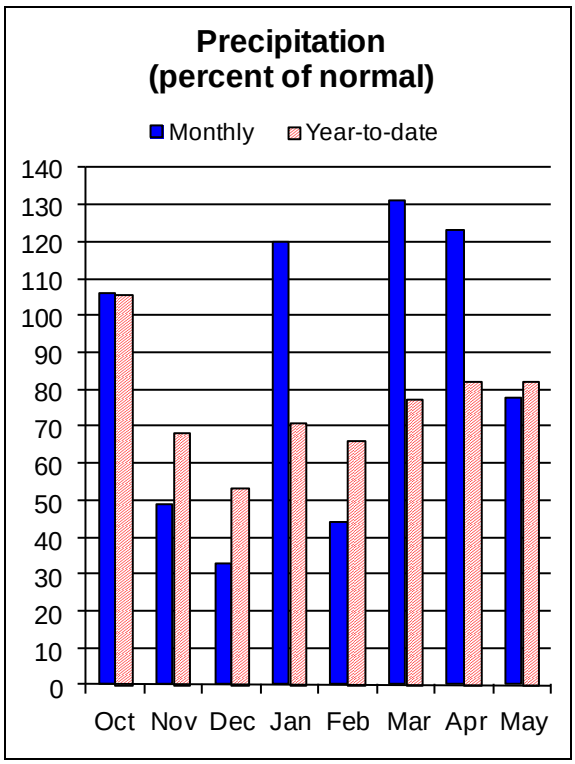


Harney Basin

June 1, 2012





Water Supply Outlook

May precipitation amounts varied across the Harney basin. In the northern part of the basin, the monthly rainfall amounts were close to average, but conditions decreased significantly to the south. Overall, May precipitation was 78 percent of average in the Harney basin. Since the beginning of water year 2012, precipitation in the basin has been 82 percent of average, the lowest in the state.

All SNOTEL sites in the Harney basin were melted out as of June 1. For most sites, this is a normal occurrence. However, last year at the end of May, Fish Creek SNOTEL in the Steens Mountains still had 100 inches of snow depth (49 inches of snow water). In contrast, this year it peaked at 70 inches of snow depth (22 inches of snow water) back in April and melted out by June 1, which is earlier than normal.

Summer streamflow forecasts in the Harney basin remain significantly below normal as June 1. The June through September streamflow forecasts in the basin range from 13 percent of average for Trout Creek near Denio to 44 percent of average for the Donner Und Blitzen River near Frenchglen. Water users in the basin can expect significantly below normal streamflows for the summer of 2012.

For more information contact your local Natural Resources Conservation Service office:
Hines - (541) 573-6446
Or visit: http://www.or.nrcs.usda.gov/snow/watersupply/

HARNEY BASIN
Streamflow Forecasts - June 1, 2012

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (1000AF)	50% (% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
Donner Und Blitzen R nr Frenchglen	JUN-JUL	2.3	6.6	9.6	38	12.6	16.9	25
	JUN-SEP	5.1	10.1	13.5	44	16.9	22	31
Silvies R nr Burns	JUN-JUL	0.1	0.3	4.5	34	8.7	14.8	13.3
	JUN-SEP	0.3	1.1	5.9	37	10.7	17.8	16.0
Trout Ck nr Denio	JUN-JUL	0.1	0.3	0.3	9	0.7	1.5	2.9
	JUN-SEP	0.1	0.4	0.5	13	1.0	1.9	3.6

HARNEY BASIN
Reservoir Storage (1000 AF) - End of May

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg

HARNEY BASIN
Watershed Snowpack Analysis - June 1, 2012

Watershed	Number of Data Sites	This Year as % of Last Yr	Average
Donner und Blitzen River	2	0	0
Silver Creek (Harney Co.)	2	0	0
Silvies River	5	0	0
Trout Creek	2	0	0

* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

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Recession Flow Forecasts

Recession flow forecasts are presented below for key streamflow sites where reliable, daily streamflow data are available. The recession flow forecasts use exceedance probabilities in a format similar to the standard water supply forecasts presented in this document. Each forecast provides a range of possible outcomes representing the uncertainty of forecasting models.

The types of forecasts in the table below are:
1) Threshold flow -- Date that the daily streamflow rate falls below the given threshold flow
2) Peak flow -- Maximum daily flow
3) Date of peak flow -- Date of occurrence of maximum daily flow
4) Average daily flow on a given date

OWYHEE AND MALHEUR BASINS					
FORECAST POINT	*FORECAST THRESHOLD*	*FORECAST VALUE ---------- CHANCE OF EXCEEDING ----------*			*LONG-TERM AVERAGE VALUE*
		90%	*50%*	*10%*	
Owyhee R nr Rome	2000 cfs	Observed on April 3rd			**May 6**
Owyhee R nr Rome	1000 cfs	Observed on April 6th			**May 18**
Owyhee R nr Rome	500 cfs	Observed on May 3rd			**Jun 2**

UPPER JOHN DAY BASIN					
FORECAST POINT	*FORECAST THRESHOLD*	*FORECAST VALUE ---------- CHANCE OF EXCEEDING ----------*			*LONG-TERM AVERAGE VALUE*
		90%	*50%*	*10%*	
John Day R at Service Creek	Average Daily Flow on Aug. 1st	80	140	320	**271**

UPPER DESCHUTES AND CROOKED BASINS					
FORECAST POINT	*FORECAST THRESHOLD*	*FORECAST VALUE ---------- CHANCE OF EXCEEDING ----------*			*LONG-TERM AVERAGE VALUE*
		90%	*50%*	*10%*	
Crane Prairie Inflow	Date of Peak	Peak Likely Observed on May 7th			**May 25**
Crane Prairie Inflow	Peak Flow	Peak Likely Observed – 407 cfs			**403**
Crane Prairie Inflow	Average Daily Flow on Oct. 1st	255	290	325	**269**
Prineville Reservoir Inflow	113 cfs	Observed on May 16th			**June 3**
Prineville Reservoir Inflow	75 cfs	Observed on May 30th			**June 11**
Prineville Reservoir Inflow	50 cfs	June 04	June 12	Jul 01	**June 19**
Whychus Creek nr Sisters	100 cfs	Aug 07	Aug 29	Sep 21	**August 16**

ROGUE AND UMPQUA BASINS					
FORECAST POINT	*FORECAST THRESHOLD*	*FORECAST VALUE ---------- CHANCE OF EXCEEDING ---------*			*LONG-TERM AVERAGE VALUE*
		90%	*50%*	*10%*	
South Umpqua R nr Brockway	90 cfs	Aug 02	Aug 16	Sept 01	**August 8**
South Umpqua R at Tiller	140 cfs	Jul 17	Jul 30	Aug 12	**July 11**
South Umpqua R at Tiller	90 cfs	Aug 02	Aug 20	Sep 06	**August 1**
South Umpqua R at Tiller	60 cfs	Aug 22	Sep 11	Oct 01	**August 28**

LAKE COUNTY AND GOOSE LAKE BASINS					
FORECAST POINT	*FORECAST THRESHOLD*	*FORECAST VALUE ---------- CHANCE OF EXCEEDING ---------*			*LONG-TERM AVERAGE VALUE*
		90%	*50%*	*10%*	
Deep Ck ab Adel	100 cfs	Jun 01	Jun 10	Jun 23	**June 17**
Honey Ck nr Plush	100 cfs	Apr 06	Apr 24	May 12	**May 16**
Honey Ck nr Plush	50 cfs	Apr 20	May 12	Jun 03	**June 4**
Twentymile Ck nr Adel	50 cfs	Observed on May 19th			**May 30**
Twentymile Ck nr Adel	10 cfs	Jun 12	Jun 19	Jul 06	**July 20**

HARNEY BASIN					
FORECAST POINT	*FORECAST THRESHOLD*	*FORECAST VALUE ---------- CHANCE OF EXCEEDING ---------*			*LONG-TERM AVERAGE VALUE*
		90%	*50%*	*10%*	
Silvies R nr Burns	400 cfs	Observed on May 5th			**May 21**
	200 cfs	Observed on May 12th			**June 2**
	100 cfs	Observed on Jun 1st			**June 13**
	50 cfs	June 06	Jun 15	Jul 05	**July 3**
Donner Und Blitzen R nr Frenchglen	200 cfs	May 28	Jun 10	Jun 23	**June 20**
Donner Und Blitzen R nr Frenchglen	100 cfs	Jun 18	Jun 30	Jul 12	**July 9**

Summary of SNOTEL Data

June 2012

SNOW COURSE		ELEVATION	DATE	SNOW DEPTH	WATER CONTENT	LAST YEAR	AVERAGE 71-00
Oregon							
ANEROID LAKE	SNOTEL	7400	6/01/12	41	15.9	27.8	15.5
ANNIE SPRING	SNOTEL	6010	6/01/12	40	15.7	51.8	22.8
ARBUCKLE MTN	SNOTEL	5770	6/01/12	0	.0	8.8	.7
BEAR GRASS	SNOTEL	4720	6/01/12	50	25.7	--	--
BEAVER RES.	SNOTEL	5150	6/01/12	0	.0	.0	.0
BIG RED MTN	SNOTEL	6050	6/01/12	0	3.5	37.4	8.3
BIGELOW CAMP	SNOTEL	5130	6/01/12	0	.0	6.2	.0
BILLIE CK DVD	SNOTEL	5280	6/01/12	0	.0	8.4	.0
BLAZED ALDER	SNOTEL	3650	6/01/12	15	8.0	34.8	5.0
BLUE MTN SPGS	SNOTEL	5870	6/01/12	0	.0	.3	.0
BOURNE	SNOTEL	5850	6/01/12	0	.0	4.9	.1
BOWMAN SPRNGS	SNOTEL	4530	6/01/12	0	.0	.0	.0
CASCADE SUM.	SNOTEL	5100	6/01/12	0	.0	39.6	5.9
CHEMULT ALT	SNOTEL	4850	6/01/12	0	.0	.0	.0
CLACKAMAS LK.	SNOTEL	3400	6/01/12	0	.0	.0	.0
CLEAR LAKE	SNOTEL	3810	6/01/12	0	.0	.0	.3
COLD SPRINGS	SNOTEL	5940	6/01/12	0	.0	27.9	4.5
COUNTY LINE	SNOTEL	4830	6/01/12	0	.0	.0	.1
CRAZYMAN FLAT	SNOTEL	6180	6/01/12	0	.0	2.3	.0
DALY LAKE	SNOTEL	3690	6/01/12	0	.0	.6	.5
DERR	SNOTEL	5850	6/01/12	0	.0	.0	.0
DIAMOND LAKE	SNOTEL	5280	6/01/12	0	.0	6.5	.3
EILERTSON	SNOTEL	5510	6/01/12	0	.0	.0	.0
EMIGRANT SPGS	SNOTEL	3800	6/01/12	0	.0	.0	.0
FISH CREEK	SNOTEL	7660	6/01/12	0	.0	49.4	13.8
FISH LK.	SNOTEL	4660	6/01/12	0	.0	.0	.0
FOURMILE LAKE	SNOTEL	5970	6/01/12	0	.0	20.8	6.2
GERBER RES	SNOTEL	4890	6/01/12	0	.0	.0	.0
GOLD CENTER	SNOTEL	5410	6/01/12	0	.0	.0	.0
GREENPOINT	SNOTEL	3310	6/01/12	0	.0	.0	.0
HIGH RIDGE	SNOTEL	4920	6/01/12	0	.0	18.6	1.2
HOGG PASS	SNOTEL	4790	6/01/12	0	.0	12.2	10.8
HOLLAND MDWS	SNOTEL	4930	6/01/12	0	.0	16.1	2.1
IRISH-TAYLOR	SNOTEL	5540	6/01/12	56	22.3	39.4	26.1
JUMP OFF JOE	SNOTEL	3520	6/01/12	0	.0	2.7	.2
KING MTN #2	SNOTEL	4340	6/01/12	0	.0	.0	.0
LAKE CK R.S.	SNOTEL	5240	6/01/12	0	.0	.0	.0
LITTLE MEADOW	SNOTEL	4020	6/01/12	2	2.5	30.6	3.6
LUCKY STRIKE	SNOTEL	4970	6/01/12	0	.0	.0	.0
MADISON BUTTE	SNOTEL	5150	6/01/12	0	.0	.0	.0
MARION FORKS	SNOTEL	2590	6/01/12	0	.0	.0	.0
MCKENZIE	SNOTEL	4770	6/01/12	37	21.3	51.0	19.6
MILKSHAKES	SNOTEL	5580	6/01/12	46	22.7	--	--
MILLER WOODS	SNOTEL	420	6/01/12	0	.0	.0	--
MOSS SPRINGS	SNOTEL	5760	6/01/12	0	.0	27.6	4.0
MT HOOD TEST	SNOTEL	5370	6/01/12	102	50.4	66.5	48.1
MT HOWARD	SNOTEL	7910	6/01/12	10	6.1	18.6	7.8
MUD RIDGE	SNOTEL	4070	6/01/12	14	4.3	16.7	1.8
NEW CRESCENT	SNOTEL	4910	6/01/12	0	.0	.0	.0
NORTH FK RES	SNOTEL	3060	6/01/12	7	4.3	19.4	.5
OCHOCO MEADOW	SNOTEL	5430	6/01/12	0	.0	.0	.0
PEAVINE RIDGE	SNOTEL	3420	6/01/12	0	.0	.0	.3
QUARTZ MTN	SNOTEL	5720	6/01/12	0	.0	.0	.0
R.R. OVERPASS	SNOTEL	2680	6/01/12	0	.0	.0	.0
RED HILL	SNOTEL	4410	6/01/12	54	33.9	56.3	16.3
ROARING RIVER	SNOTEL	4950	6/01/12	0	.0	30.4	5.2

SNOW COURSE	ELEVATION	DATE	SNOW DEPTH	WATER CONTENT	LAST YEAR	AVERAGE 71-00
Oregon (continued)						
ROCK SPRINGS SNOTEL	5290	6/01/12	0	.0	.0	.0
SADDLE MTN SNOTEL	3110	6/01/12	0	.0	.0	--
SALT CK FALLS SNOTEL	4220	6/01/12	0	.0	22.0	.5
SANTIAM JCT. SNOTEL	3740	6/01/12	0	.0	.0	.0
SCHNEIDER MDW SNOTEL	5400	6/01/12	0	.0	14.4	1.9
SEINE CREEK SNOTEL	2060	6/01/12	0	.0	.0	.0
SEVENMILE MARSH SNTL	5700	6/01/12	0	.1	31.2	6.5
SILVER CREEK SNOTEL	5740	6/01/12	0	.0	.0	.0
SILVIES SNOTEL	6990	6/01/12	0	.0	11.4	1.8
SMITH RIDGE SNOTEL	3330	6/01/12	0	.0	--	--
SNOW MTN SNOTEL	6220	6/01/12	0	.0	3.1	.1
SF BULL RUN SNOTEL	2690	6/01/12	0	.0	.0	.0
STARR RIDGE SNOTEL	5250	6/01/12	0	.0	.0	.0
STRAWBERRY SNOTEL	5770	6/01/12	0	.0	.0	.0
SUMMER RIM SNOTEL	7080	6/01/12	0	.0	13.0	1.2
SUMMIT LAKE SNOTEL	5610	6/01/12	66	30.5	53.4	26.6
SUN PASS SNOTEL	5400	6/01/12	0	.0	.0	--
SWAN LAKE MTN SNOTEL	6830	6/01/12	0	.0	22.3	--
TAYLOR BUTTE SNOTEL	5030	6/01/12	0	.0	.0	.0
TAYLOR GREEN SNOTEL	5740	6/01/12	0	.0	8.5	.1
THREE CK MEAD SNOTEL	5690	6/01/12	0	.0	17.2	1.9
TIPTON SNOTEL	5150	6/01/12	0	.0	.0	.0
TOKETEE AIRSTRIP SN	3240	6/01/12	0	.0	.0	.0
WOLF CREEK SNOTEL	5630	6/01/12	0	.0	6.6	.1
California						
ADIN MTN SNOTEL	6190	6/01/12	0	.0	.0	.7
CEDAR PASS SNOTEL	7030	6/01/12	0	.0	18.0	2.7
CROWDER FLAT SNOTEL	5170	6/01/12	0	.0	.0	.0
DISMAL SWAMP SNOTEL	7360	6/01/12	0	.0	43.3	8.6
Idaho						
MUD FLAT SNOTEL	5730	6/01/12	0	.0	.0	.0
SOUTH MTN SNOTEL	6500	6/01/12	0	.0	5.0	.0
Nevada						
BEAR CREEK SNOTEL	7800	6/01/12	0	.0	28.9	7.1
BIG BEND SNOTEL	6700	6/01/12	0	.0	.0	.1
BUCKSKIN,L SNOTEL	6700	6/01/12	0	.0	.0	.0
DISASTER PEAK SNOTEL	6500	6/01/12	0	.0	.0	.0
FAWN CREEK SNOTEL	7050	6/01/12	0	.0	11.6	1.4
GRANITE PEAK SNOTEL	7800	6/01/12	0	.0	34.7	11.9
JACK CREEK, U SNOTEL	7280	6/01/12	0	.0	13.8	2.8
LAMANCE CREEK SNOTEL	6000	6/01/12	0	.0	.0	.0
LAUREL DRAW SNOTEL	6700	6/01/12	0	.0	.0	.0
SEVENTYSIX CK SNOTEL	7100	6/01/12	0	.0	.0	.0
TAYLOR CANYON SNOTEL	6200	6/01/12	0	.0	.0	.0

(d) denotes discontinued site.

Basin Outlook Reports: How Forecasts Are Made

Federal – State – Private
Cooperative Snow Surveys

For more water supply and resource management information, contact:

USDA, Natural Resources Conservation Service
Snow Survey Office
1201 NE Lloyd Suite 900
Portland, OR 97232

Phone: (503) 414-3270 **Web site: *http://www.or.nrcs.usda.gov/snow/index.html***

Most of the annual streamflow in the western United States originates as snowfall that has accumulated in the mountains during the winter and early spring. As the snowpack accumulates, hydrologists estimate the runoff that will occur when it melts. Measurements of snow water equivalent at selected manual snow courses and automated SNOTEL sites, along with precipitation, antecedent streamflow, and indices of the El Niño / Southern Oscillation are used in computerized statistical and simulation models to prepare runoff forecasts. These forecasts are coordinated between hydrologists in the Natural Resources Conservation Service and the National Weather Service. Unless otherwise specified, all forecasts are for flows that would occur naturally without any upstream influences

Forecasts of any kind, of course, are not perfect. Streamflow forecast uncertainty arises from three primary sources: (1) uncertain knowledge of future weather conditions, (2) uncertainty in the forecasting procedure, and (3) errors in the data. The forecast, therefore, must be interpreted not as a single value but rather as a range of values with specific probabilities of occurrence. The middle of the range is expressed by the 50% exceedance probability forecast, for which there is a 50% chance that the actual flow will be above, and a 50% chance that the actual flow will be below, this value. To describe the expected range around this 50% value, four other forecasts are provided, two smaller values (90% and 70% exceedance probability) and two larger values (30%, and 10% exceedance probability). For example, there is a 90% chance that the actual flow will be more than the 90% exceedance probability forecast. The others can be interpreted similarly.

The wider the spread among these values, the more uncertain the forecast. As the season progresses, forecasts become more accurate, primarily because a greater portion of the future weather conditions become known; this is reflected by a narrowing of the range around the 50% exceedance probability forecast. Users should take this uncertainty into consideration when making operational decisions by selecting forecasts corresponding to the level of risk they are willing to assume about the amount of water to be expected. If users anticipate receiving a lesser supply of water, or if they wish to increase their chances of having an adequate supply of water for their operations, they may want to base their decisions on the 90% or 70% exceedance probability forecasts, or something in between. On the other hand, if users are concerned about receiving too much water (for example, threat of flooding), they may want to base their decisions on the 30% or 10% exceedance probability forecasts, or something in between. Regardless of the forecast value users choose for operations, they should be prepared to deal with either more or less water. Users should remember that even if the 90% exceedance probability forecast is used, there is still a 10% chance of receiving less than this amount. By using the exceedance probability information, users can easily determine the chances of receiving more or less water.

Interpreting Water Supply Forecasts

Each month, five forecasts are issued for each forecast point and each forecast period. Unless otherwise specified, all streamflow forecasts are for streamflow volumes that would occur naturally without any upstream influences. Water users need to know what the different forecasts represent if they are to use the information correctly when making operational decisions. The following is an explanation of each of the forecasts.

90 Percent Chance of Exceedance Forecast. There is a 90 percent chance that the actual streamflow volume will exceed this forecast value, and there is a 10 percent chance that the actual streamflow volume will be less than this forecast value.

70 Percent Chance of Exceedance Forecast. There is a 70 percent chance that the actual streamflow volume will exceed this forecast value, and there is a 30 percent chance that the actual streamflow volume will be less than this forecast value.

50 Percent Chance of Exceedance Forecast. There is a 50 percent chance that the actual streamflow volume will exceed this forecast value, and there is a 50 percent chance that the actual streamflow volume will be less than this forecast value. Generally, this forecast is the middle of the range of possible streamflow volumes that can be produced given current conditions.

30 Percent Chance of Exceedance Forecast. There is a 30 percent chance that the actual streamflow volume will exceed this forecast value, and there is a 70 percent chance that the actual streamflow volume will be less than this forecast value.

10 Percent Chance of Exceedance Forecast. There is a 10 percent chance that the actual streamflow volume will exceed this forecast value, and there is a 90 percent chance that the actual streamflow volume will be less than this forecast value.

*Note: There is still a 20 percent chance that actual streamflow volumes will fall either below the 90 percent exceedance forecast or above the 10 percent exceedance forecast.

These forecasts represent the uncertainty inherent in making streamflow predictions. This uncertainty may include sources such as: unknown future weather conditions, uncertainties associated with the various prediction methodologies, and the spatial coverage of the data network in a given basin.

30-Year Average. The 30-year average streamflow for each forecast period is provided for comparison. The average is based on data from 1971-2000. The % AVG. column compares the 50% chance of exceedance forecast to the 30-year average streamflow; values above 100% denote when the 50% chance of exceedance forecast would be greater than the 30-year average streamflow.

AF - Acre-feet, forecasted volume of water are typically in thousands of acre-feet.

These forecasts are given to users to help make risk-based decisions. Users can select the forecast corresponding to the level of risk they are willing to accept in order to minimize the negative impacts of having more or less water than planned for.

To Decrease the Chance of Having Less Water than Planned for: A user might determine that making decisions based on a 50 percent chance of exceedance forecast is too much risk to take (there is still a 50% chance that the user will receive less than this amount). To reduce the risk of having less water than planned for, users can base their operational decisions on one of the forecasts with a greater chance of being exceeded such as the 90 or 70 percent exceedance forecasts.

To Decrease the Chance of Having More Water than Planned for: A user might determine that making decisions based on a 50 percent chance of exceedance forecast is too much risk to take (there is still a 50% chance that the user will receive more than this amount). To reduce the risk of having more water than planned for, users can base their operational decisions on one of the forecasts with a lesser chance of being exceeded such as the 30 or 10 percent exceedance forecasts.

Using the forecasts - an Example

Using the 50 Percent Exceedance Forecast. Using the example forecasts shown below, there is a 50% chance that actual streamflow volume at the Boise River near Twin Springs will be less than 685 KAF between April 1 and July 31. There is also a 50% chance that actual streamflow volume will be greater than 685 KAF.

Using the 90 and 70 Percent Exceedance Forecasts. If an unexpected shortage of water could cause problems (such as irrigated agriculture), users might want to plan on receiving 610 KAF (from the 70 percent exceedance forecast). There is a 30% chance of receiving *less* than 610 KAF.

Alternatively, if users determine the risk of using the 70 percent exceedance forecast is too great, then they might plan on receiving 443 KAF (from the **90** percent exceedance forecast). There is 10% chance of receiving less than 443 KAF.

Using the 30 or 10 Percent Exceedance Forecasts. If an unexpected excess of water could cause problems (such as operating a flood control reservoir), users might plan on receiving 760 KAF (from the 30 percent exceedance forecast). There is a 30% chance of receiving *more* than 760 KAF.

Alternatively, if users determine the risk of using the 30 percent exceedance forecast is too great, then they might plan on receiving 927 KAF (from the 10 percent exceedance forecast). There is a 10% chance of receiving more than 927 KAF.

Users could also choose a volume in between any of these values to reflect their desired risk level.

OWYHEE AND MALHEUR BASINS

Streamflow Forecasts - February 1, 2006

		<<====== Drier ====== Future Conditions ======= Wetter =====>>				
Forecast Point	Forecast Period	========== Chance Of Exceeding * ==========				
		90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
MALHEUR near Drewsey	FEB-JUL	148	184	210	165	238	282	127
	APR-SEP	87	110	128	168	147	177	76
NF MALHEUR at Beulah	FEB-JUL	108	127	141	157	156	178	90
OWYHEE RESV INFLOW (2)	FEB-JUL	602	792	935	134	1090	1340	700
	APR-SEP	341	473	575	134	687	869	430

** 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.*

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http://www.or.nrcs.usda.gov/snow/watersupply/

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